PHILIP MORRIS U. S. A.

INTER-OFFICE CORRESPONDENCE

RICHMOND, VIRGINIA

To: Mr. A. Holtzman

Date: December 7, 1976

From: R. B. Seligman

Subject: P. Isenring's Telex of December 3, 1976

The compound referred to in the telex is carbonylchlorofluoride and it is similar to phosgene, a very toxic gas. Collectively these compounds are called carbonyl halides. When halogenated hydrocarbons such as Freon 12, a common refrigerant, are heated in air to temperatures approximating the temperature of the burning coal in a cigarette, the following decomposition products are possible: hydrochloric acid, hydrofluoric acid, carbon dioxide, phosgene or other carbonyl halides and chlorine. At these elevated temperatures, if phosgene or other carbonyl halides were formed they would rapidly decompose to hydrochloric or hydrofluoric acid and carbon dioxide. The halogen acids cited above are very irritating and would cause an immediate withdrawal response in the person exposed.

At a meeting between representatives of Philip Morris and DuPont in 1970, the subject of hazards associated with the burning cigarette in the presence of "Freon" was discussed at length. A DuPont representative stated that General Electric has looked for phosgene when cigarettes were smoked in the presence of Freon 12 and Freon 22 and they did not detect any phosgene. These are unpublished results. Imperial Chemical Industries has studied this problem and found no phosgene under a

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variety of conditions when cigarettes were smoked in an atmosphere of halogenated hydrocarbons which decompose to form phosgene in a manner similar to Freon. In addition, ICI also smoked cigarettes in an atmosphere of phosgene and could find no phosgene in the cigarette smoke. A copy of the paper is attached ("The Formation of Phosgene by the Action of Hot Surfaces and Its Absence When Tobacco is Smoked in Atmospheres Containing Chlorinated Hydrocarbon Vapours", British J. Industr. Med., 1955, 12: 304).

More recently, investigators at Oak Ridge National Laboratories have exposed rats for one day to smoke from cigarettes smoked in an atmosphere of Freon and observed no unexpected toxicity. (These results are unpublished and strictly confidential.) We conclude that the available evidence does not support a carbonyl halide hazard when cigarettes are smoked in an atmosphere of Freon.

Also attached is a paper by R. R. Baker describing the temperatures in a burning cigarette as per Dr. Hulpke's request.

R B Seligman

RBS/sgr

Attachments (2)

cc: Mr. F. E. Resnik (with attachments)
Dr. H. Wakeham (without attachments)
Dr. T. S. Osdene (without attachments)
Mr. J. L. Charles (without attachments)

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